



## **People living under threat of volcanic hazard in south Iceland: vulnerability and risk perception**

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The highly active sub-glacial volcano Katla in southern Iceland has erupted approximately twice a century since the beginning of settlement in 874 AD. The last major eruption was in 1918 and scientists have forecast an eruption within the next three to five years. A Katla eruption is accompanied by a major glacier outburst flood, tephra fall and lightning. When the glacial flood collides with the ocean it can cause a tsunami in the area. The farming area, Álftaver, is in the direct path of the flood. Furthermore, the town Vík is situated by the sea and could be hit by a tsunami. Both communities have been exposed to natural hazards following previous eruptions in Katla. The purpose of this research was to (1) analyze and estimate the vulnerability of the residents, (2) examine their risk perception, preparedness, and mitigation in relation to an eruption in Katla and, (3) investigate the public and local representatives' knowledge of the official evacuation plan from 1973. In 2004, a snowball sample technique was used to select 28 people, between the ages of 25-95, for an open, in depth, face to face interview. All participants were local, permanent residents of the two communities and most had lived in the area their entire lives. They all knew about one or more volcanic eruptions in Katla and the subsequent risks. Often, this information had been passed down from older generations who had firsthand experience. However, many were not convinced of the imminent eruption forecast by scientists as they believe that the volcano was no longer active. In both communities different social, cultural and economic factors played a central role in how people perceived natural hazards and how they dealt with the fact that their lives and livelihood could be at risk. Recent natural hazards, such as snow avalanches and earthquakes were considered more serious

and devastating in general in Iceland than an eruption in Katla despite the fact that volcanic hazard was the most frequently mentioned hazard in the area. The participants knew about the existing evacuation plan and had participated in an evacuation exercise. However, they had not made personal preparedness or mitigation plans in case of an eruption. People in Álftaver were concerned about the evacuation process and found it very confusing. They neither found the emergency plan or the proposed methods for risk communication relevant for the farming society. The participants in Vík were confident about the evacuation process; they knew they had to go to higher grounds if threatened by a tsunami and they felt that they would have enough time to evacuate. It is evident that the perceptions of the inhabitants, especially in the farming area, do not correspond to those tasked with the responsibility of developing the emergency and evacuation plans. In order to ensure the safety of all concerned, there is a need for better cooperation, mutual understanding and communication from the scientific community, governmental authorities and the inhabitants. Since this research was completed new emergency and evacuation plans have been constructed and exercised in cooperation with the local and national authorities, the scientific community, the response agencies and the local residents.